

We Claim:

1. A two-part oral composition capable of mineralizing surface enamel, comprising:

(a) a first discrete part containing an effective amount of at least one partially water soluble calcium salt;

(b) a second discrete part containing an effective amount of a fluoride salt; and at least 2 wt % based on the second part of at least one bicarbonate salt; wherein the first and second parts each have a pH in water such that a mixed aqueous solution formed by mixing the first and second parts with water and/or saliva has a pH of between 7.0 and 10.0; and

(c) a pharmaceutically acceptable carrier component.

2. The composition of claim 1, wherein said at least one bicarbonate salt is present in amounts of at least 40% by weight based on the weight of said second discrete part.

3. The composition of claim 1 wherein said partially water soluble calcium salt is selected from the group consisting of calcium sulfate, hydrous calcium sulfate, calcium sulfate hemihydrate, calcium sulfate dihydrate, calcium malate, calcium tartrate, calcium malonate, calcium succinate, and mixtures of the foregoing.

4. The composition of claim 3 wherein said partially water-soluble calcium salt is calcium sulfate.

5. The composition of claim 1 wherein said second discrete part contains at least one water soluble carbonate salt.
6. The composition of claim 5 wherein the water-soluble carbonate salt is sodium carbonate, potassium carbonate, or a mixture of the foregoing.
7. The composition of claim 1 wherein the second part further comprises a water soluble orthophosphate salt.
8. The composition of claim 1 wherein said bicarbonate salt is sodium bicarbonate, potassium bicarbonate, ammonium bicarbonate, or mixtures thereof.
9. The composition of claim 8 wherein said bicarbonate salt is present in amounts of from 25 to 70% by weight relative to the total weight of the second part.
10. The composition of claim 9 wherein said bicarbonate salt is present in amount of from 50 to 60% by weight relative to the weight of the second part.
11. The composition of claim 1 wherein said first discrete part is free of a water-soluble orthophosphate salt.
12. The composition of claim 1 wherein said calcium salt is present in amounts of from about 0.1 to about 15.0 weight % based on the combined weight of the first and second parts.

13. The composition of claim 5 wherein said calcium salt and the carbonate salt are present in an amount so as to provide a carbonate salt to calcium salt molar ratio of from about 0.1:1.0 to about 1:1.
14. The composition of claim 1 wherein said fluoride salt is an alkali metal fluoride or stannous fluoride.
15. The composition of claim 1 wherein said fluoride salt is present in amounts of about 0.01 to 5.0% by weight based on the combined weight of said first and second discrete parts.
16. The composition of claim 1 wherein the carrier component is selected from the group consisting of toothpaste, mouth rinses, dental gels, professional treatment gels, and tooth powders.
17. The composition of claim 16 wherein said carrier component is a toothpaste.
18. A method of mineralizing imperfections on the surface of tooth enamel comprising; contacting the tooth enamel surface with a two-part oral composition capable of mineralizing surface enamel, comprising:
- (a) a first discrete part containing an effective amount of at least one partially water soluble calcium salt;
 - (b) a second discrete part containing an effective amount of a fluoride salt; and at least 2 wt % based on the second part of at least one bicarbonate salt;

wherein the first and second parts each have a pH in water such that a mixed aqueous solution formed by mixing the first and second parts with water and/or saliva has a pH of between 7.0 and 10.0; and

(c) a pharmaceutically acceptable carrier component.

19. The method of claim 18 wherein said partially water soluble calcium salt is selected from the group consisting of calcium sulfate, hydrous calcium sulfate, calcium sulfate hemihydrate, calcium sulfate dihydrate, calcium malate, calcium tartrate, calcium malonate, calcium succinate, and mixtures of the foregoing.

20. The method of claim 18 wherein said carrier component is a toothpaste, and said tooth enamel is contacted with said composition by brushing.